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ABSTRACT

Schools often face a conflict between placing an emphasis on the pursuit of academic excellence (academic press) and creating a positive school community. This paper examines the separate and joint achievement effects of both academic press and communality across a sample of American public and private high schools. The hypothesis holds that when academic press is weak, efforts to strengthen school sense of community may actually constrain student achievement, especially among low-socioeconomic (SES) schools. Indices of academic press and communality were used to analyze data from a subsample of the National Education Longitudinal Study (NELS): 88 First Follow-Up Survey. The final subsample included an average of 20 students and 11 teachers across each of the 398 schools. The overall pattern of findings supported the major arguments. First, academic press was significantly linked to achievement across all schools. Second, although low-SES schools tended to have the lowest levels of academic press, they also had the strongest achievement effect. Third, communality was negatively associated with achievement in low-SES schools with weak academic press. Fourth, for low- and middle-SES schools, the combination of academic press and communal organization constituted the strongest package of achievement effects. Finally, the strongest effects for high-SES schools were predicted for combinations of high communality and low academic press. The implications are that: (1) schools do their students no service by diluting their academic mission; (2) exposing students to mainstream academic subjects can help to translate higher expectations into a meaningful academic drama; and (3) educational equity is advanced as low-SES schools marshal their human and social capital in more academically focused ways. The major conclusion was that the most effective schools were those where a sense of community emerged as a positive result of a strong sense of academic purpose. One figure and eight tables are included. Appendices contain statistical data. (Contains 38 references.) (LMI)

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Academic Press and School Sense of Community:

Sources of Friction, Prospects for Synthesis

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Many of the more enduring tensions in American educational policy relate to the question of schooling's fundamental purpose. Specifically, should schools strive to pursue a distinctively academic mission for all students? Or should they aim for greater responsiveness to a diverse range of students' social needs and interests? Of course, both visions seem desirable, and many schools find ways to effectively balance and integrate them. And yet, the tension between them constitutes a major theme in American educational history, one evident in shifts from the "Committee of Ten," to the "Cardinal Principals," from the "Progressive Movement," to "Sputnik," and from the "Shopping Mall High School," to a "Nation at Risk" (see, Cremin, 1961; Ravitch, 1985; Powell, Farrar & Cohen, 1985).

The tension is also clear from numerous empirical studies indicating the many trade-offs often made within schools between maintaining meaningful academic demand and social cohesion and support (Gordon, 1957; Coleman, 1961; Bidwell, 1965; Powell, Farrar & Cohen, 1985; Sedlak, Wheeler, Pullin & Cusick, 1986). That such conflict occurs is also apparent from a recent four-year study of two comprehensive inner-city high schools, (Shouse, Schneider & Richards, 1991; Shouse & Schneider, 1993). In seeking to identify key values and understandings at the schools, a clear distinction emerged. At one, the main message seemed to be, "of course it's important for our students to do well academically, but out first concern is that they stay in school, stay out of gangs, and stay alive." Teacher caring took on a particularistic hue, with allowances made for poorly performing students and those whose personal backgrounds seemed especially harsh. At the other school, the main message seemed to be, "sure we want our students to stay in school and stay out of trouble, but our first goal is to raise their achievement." Here, caring seemed to take a more universalistic form. Teachers were sensitive to the social obstacles their students faced, but did not allow these to excuse poor performance. Subsequent statistical comparisons revealed that although students at the first school received higher grades, those at the second were more likely to go on to college. It

seemed clear that at the first school, "care" and "support" were expressed in ways that constrained the pursuit of academic goals.

As our nation strives to redesign its schools toward greater equity and effectiveness, it becomes critical to systematically investigate this friction and its affects on student achievement. This seems even more important given the increasing interest in "schools as communities" -- the idea that shared values, common activities, and caring relationships among student and adult members help produce a more enduring and effective brand of schooling. While some studies report significant achievement effects for school "communality" (Bryk and Driscoll, 1988; Bryk, Lee & Holland, 1993), the theoretical connection between social cohesiveness and academic effectiveness is unclear. As Monk (1992) points out, when commonly held beliefs and understandings are antithetical to academic endeavor, a "dysfunctional" sense of community may result.

It is necessary, therefore, to treat school "sense of community" as conceptually distinct from school "academic press." Responding to this need, this paper examines the separate and joint achievement effects of both characteristics across a sample of American public and private high schools. Our central hypothesis holds that when academic press is weak, efforts to strengthen school sense of community may actually *constrain* student achievement, especially among low-SES schools. Put another way, we expect our findings to show that strong academic press serves not only as a prerequisite for improving student achievement, but also as a basis for meaningful sense of community within schools.

Definitions of Academic Press and School Communality

Academic Press

In broad terms, the concept of "press" refers to the quality of objects, events, situations, or environments to signal, challenge, or compel individuals toward some action (Lewin, 1936). More narrowly, the term "academic press" has been used to describe the

totality of pressures embedded in a school's external environment which prompt it to pursue rigorous academic goals (Pace and Stern, 1958). Still more narrowly, but also more typically in recent years, the term signifies an internal dimension of school culture and climate. Academic press (or simply "press") is referred to as an essential characteristic of effective schools (Murphy, Weil, Hallinger & Mitman, 1982; 1985); as a mark of organizational health and institutional legitimacy (Hoy and Feldman, 1987); as the degree of normative emphasis placed on academic excellence by members of the organization (McDill, Natriello & Pallas, 1986).

Despite the importance attributed to academic press in schools literature, it has yet to receive the quantitative treatment necessary to determine its real impact on student achievement. This is a primary goal of this paper and details of a specific measurement index will be presented later in the section on methodology. At this point, however, we offer a more general framework for understanding this concept, one comprising the following three components:

Academic Climate. Rather than dispersing their students across a wide range of subjects and ability levels, schools with high academic press channel them into higher status courses (geometry or physics, as opposed to consumer math or general science); they not only encourage students to work for high grades, but also strive to protect the integrity of the grades they reward; they emphasize the value of homework and recognize and honor outstanding performance.

Disciplinary Climate. A deep understanding exists in schools with high academic press, that broad-based student achievement cannot occur without good attendance and reasonable decorum in hallways and classrooms. To that end, such schools work to establish appropriate and effective attendance and disciplinary policies, producing results that are clearly perceived by adult and student school members.

Teachers' Instructional Practices and Emphasis. Teachers express a sense of academic press to the extent that they establish *objective and challenging* standards for

student performance; that they cover course content in ways which promote student understanding and desire to learn more; that they regularly assign meaningful homework and provide useful feedback to students and their parents.

High academic press schools send strong messages to their members, infusing their activities with purpose and signaling that their intellectual activities really matter. The principles embodied in the idea of academic press help provide the sense of institutional purpose that distinguishes schooling from other socializing institutions (e.g., the family, the church, the Boy Scouts, etc.) and raises it to a level of commensurate importance.

The School as a Community

Communal themes run throughout our educational history, with Waller's (1932) "we feeling," Dewey's (1946) "embryonic community, " Kohlberg's (Power, Higgens & Kohlberg, 1988) "just community," and Lightfoot's (1983) "good high school" being just a few examples. And yet, not all of these or other such visions carry with them an implicit sense of academic ethos. In fact, even the so-called "shopping mall" high school represents a style of "community," ostensibly "held together" by diffuse authority, pluralism, peaceful coexistence, and diversity of interest (Powell, Farrar & Cohen, 1985).

Some visions of school communality, however, extend greater respect toward a more traditional understanding of schooling, one calling to mind Rodriguez's (1982) sentiment that the purpose of education is to shape and change rather than accept and tolerate. Within this vision, sense of community is viewed in terms of "respect for authority" and the "consistent enforcement of norms" (Cohen, 1983), and as requiring the type of moral and intellectual attitudes, practices, and ideals that evolve when adults refuse to "leave their values at the school door" (Grant, 1988).

Bryk and Driscoll (1988) argue that such shaping is most likely to emerge from a particular form of organizational structure. Communally organized schools, they suggest, are marked by three *core components*; 1) a set of *shared understandings* about

organizational values and purposes, about how adults and students should behave, and about students' potential as learners and citizens; 2) a *common agenda of activities* that defines school membership, fosters meaningful social interactions among school members, and links them to school traditions; and 3) a distinctive pattern of social relations embodying an *ethic of caring* visible in both collegial and student-teacher relationships. Using items from the High School & Beyond survey, Bryk and Driscoll quantitatively meld these components into an "index of communality," and their empirical results reveal positive links between communal organization and student achievement.

Mindful of Monk's earlier caution, however, it is interesting that Bryk and Driscoll's construct contains no explicit academic component. Their findings thus appear to make sense only in the context of an academically supportive organizational culture. Reflected more, perhaps, in Bryk and Driscoll's results are the effects of a particular type of communality, an *academically oriented* variety such as that found in many Catholic schools (Coleman and Hoffer, 1988; Bryk, Lee & Holland, 1993). Though this type of communality is not confined to Catholic schools, philosophical and structural obstacles exist which often constrain its development in the public sector.

For example, to a greater extent than their public counterparts, there exists within Catholic schools a "widely held belief that a traditional academic curriculum is appropriate for most adolescents" (Bryk, Lee & Holland, 1993). In addition, Catholic schools have well-defined organizational boundaries enabling them to preserve such core beliefs. In contrast, public schools are more sensitive to external beliefs and norms (Meyer and Rowan, 1977; Hallinger and Murphy, 1986), and their ability to preserve a strong academic climate is affected by the extent to which intellectual endeavor is valued in the surrounding community.

Academic Press and Sense of Community: Sources of Conflict and their Special Implications for Low-SES Schools

Here, then, lies the main source of friction between school academic press and sense of community. To become more "communal," and, in fact, to retain their institutional legitimacy, public schools must respond to and even mimic, the norms, beliefs, and social structures of the students, families, and neighborhoods they serve (Dreeben, 1968; Hallinger & Murphy, 1986), whether or not these are congruent with academic goals. The implications of this social sensitivity vary across school socio-economic levels. Schools serving more affluent communities can generally rely on strong local demands for high academic performance to assist their efforts to maintain high content, instructional, and performance standards. Low-SES schools, on the other hand, must often respond to different local priorities and incentives which draw their attention more toward creating safe, socially attractive environments.

The point, of course, is not to portray high-SES schools as educational utopias or low-SES schools as educational wastelands. Teachers and researchers in urban schools know full-well the efforts of many parents and community members to push students toward higher academic goals. And yet, the prominence of such efforts reflects the degree to which they must struggle against prevailing norms and attitudes. As Hallinger and Murphy (1986) point out, unlike their higher-SES counterparts, academically effective low-SES schools must often maintain "weak linkages" with their external community. In similar contrast, and in contrast with many communalistic visions of school organization, Hallinger and Murphy also report that effective low-SES schools operate not so much in a "relationship oriented" way, but rather in a more bureaucratic "task oriented" fashion, emphasizing strong leadership and tight controls over curriculum and instruction (see also, Irvine, 1988; Sizemore, 1988; Hughes, 1988; Young, 1988).

Besides these external sources, internal sources of friction exist between academic and social goals, the impact of which should also vary across school socio-economic

levels. For example, the tendency of teachers to lower academic standards in exchange for student cooperation and good behavior was noted by Waller (1932) over half a century ago, and numerous more recent studies have supported his finding (see Sizer, 1984; Powell, Farrar & Cohen, 1985; Sedlak, et. al, 1986; Grant, 1988). In a similar vein, analyses by Gordon (1957), Coleman (1961), and Bidwell (1965) suggest how the realities of classroom life, student sub-culture, and individual student background draw teachers away from objective judgments and universalistic relationships, and toward judgments and relationships more reflective of students' personal characteristics. While these studies highlight how teachers' *positive* perceptions of students' status, popularity, or athletic ability work to adulterate the meaning of academic achievement, more recent work indicates that teachers often apply less rigorous criteria to the efforts of minority, low-ability, or disadvantaged students (Powell, Farrar & Cohen, 1985, see p. 59) or to students perceived as "indifferent, disengaged, and defiant" (Sedlak, et. al, 1986).

Taken together, a sound basis exists to suspect that low-SES students will more likely be exposed to socially therapeutic -- rather than intellectually demanding -- values and activities, and that their schools' efforts to build more attractive, supportive, and cohesive communities may become manifest in ways which work to divert attention from academic goals. We would thus expect to find the lowest levels of academic press in our least affluent schools. For those interested in reducing educational inequality across socio-economic levels, this possibility should be of major concern.

At the same time, however, there is good basis for suspecting that school efforts to strengthen academic press should produce the *greatest results* in low-SES schools. Viewed as a social resource, the value of the academic press generated by the school should increase inversely with the availability of other academically oriented resources or support structures outside of the school. For students attending higher SES schools, alternative resources and structures are often available. Families are more likely to be intact, and parents, older siblings, and other relatives are more likely to have attained

higher levels of education. The same is also more likely to be true for family friends, neighbors, and other members of the local community. The result is a network of experience, access, and expectation which "presses" students toward higher academic performance. The school, of course, contributes to this network. But as its academic mission is supported externally, a level of redundancy develops which makes the school's contribution to that mission less critical.

In contrast, the social capital available to low-SES students may underemphasize or actually undercut the value of academic effort. Academically oriented support networks which do exist may lack closure; that is, may have critical gaps which weaken their effectiveness. For example, persuading teenagers to spend their evenings working on homework is a more daunting task for parents when other neighborhood teens are allowed to spend a great deal of unsupervised evening time outside the home. Circumstances like these intensify the importance of whatever increased level of academic press the school can provide. It is thus not so surprising that numerous studies have found stronger organizational effects among schools serving minority, urban, and low-income students (Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld, & York 1966; and see Hallinger and Murphy, 1986, pp. 349-351 for a brief summary of more recent relevant research).

A Direction for Research

A firm basis exists for expecting that achievement effects related to sense of community stem primarily not from consensus and cohesion, but rather from the strength and transmission of specific organizational values. Without a commitment to the importance and pursuit of academic endeavor, commonality of beliefs, activities, and traditions, and care for students as individuals are unlikely to positively effect achievement levels, and may even work to impede them. An important corollary follows from this; that the most powerful achievement effects should occur when academic press and sense of

community work in tandem. Thus at issue here are both negative and positive implications for educational equity across socio-economic levels. On one hand, there are serious impediments to the development of academically oriented communality in low-SES schools. On the other, this combination of organizational characteristics would appear to hold great promise for helping to the narrow the achievement gap between low and high-SES schools.

The hypotheses following from this discussion can be stated more explicitly. First, a general positive relationship is expected between school academic press levels and student achievement. Second, though we expect school academic press levels to be highest in high-SES schools, the greatest achievement effects of academic press are expected to occur among low-SES schools. Third, we expect important interactions to occur between the effects of academic press, communality, and school mean SES. As previously suggested, high levels of school communality may work to constrain student achievement in low-SES schools with weak academic press. In contrast, when academic press is high, increased communality should produce even stronger achievement effects.

Methodology

To construct suitable indices of academic press and communality, items were identified and selected from the school, teacher, and student questionnaires of the National Education Longitudinal Study (NELS:88) First Follow-Up Survey. The academic press index (see Table 1) was patterned along the lines of the conceptual components outlined earlier. The communality index (see Table 2) was patterned after that previously developed by Bryk and Driscoll (1988) using items from High School & Beyond.

[Tables 1 and 2 about here]

Following a series of exploratory ordinary least squares regression (OLS) analyses (not presented here), the direct and interactive effects of academic press and communality were examined using a series of hierarchical linear models (HLM). The basic analytic strategy was to first identify and control for student and school characteristics associated with variation in achievement, and then to introduce and evaluate the additional influence of academic press and communality. Descriptive statistics for the variables used in the HLM analyses are presented in Table 3.

[Table 3 about here]

Source of the Data

To address the various methodological issues associated with using NELS:88 data to analyze school effects (see National Center for Education Statistics, 1992, p. 17), this study employs a sub-sample of those NELS First Follow-Up schools in which responses were obtained from at least fifteen students and five teachers. Vocational and boarding schools, as well as schools with 30% or more students assigned to remedial reading or "alternative" programs were excluded from the sample. Though this strategy does not guarantee a statistically representative sample of students, teachers, or schools, it introduces no unwarranted systematic bias. The final sub-sample contains an average of 20 students and 11 teachers across each of the 398 schools. Table 4 presents the school and student sample distribution by school type.

[Table 4 about here]

Selection of Dependent Variable

The achievement effects reported here are based on mathematics test scores from the NELS:88 First Follow-Up Student Survey. Though other NELS:88 scores were

available, (English, science, social studies, and a composite of all four tests), there are good reasons for using math test scores. First, they arguably reflect *in-school* learning to a greater degree than the other tests. Second, the NELS:88 math test contains the greatest number of items and ability-level versions and is thus most immune to ceiling and floor effects. Finally, given the various recent cross-national surveys indicated deficiencies in mathematics performance among American high school students, it seems crucial to investigate avenues for improving this particular area of achievement.

Results

Table 5 reports the base achievement effects of school SES (MEANSES), school sector (SPPUB, CATH, OPRIV) communality (COM), and academic press (PRESS), controlling for salient student variables. In stepwise fashion, the top panel reveals the degree to which school-level characteristics explain between-school variation in student achievement. The bottom panel presents the controls included at the student-level. Coefficients are non-standardized and t-ratios of about $|2|$ or greater indicate statistical significance. The intercept reported in the top panel represents the predicted achievement of an average student, controlling for the student level effects reported in the bottom panel.

Turning to the bottom panel first, two types of student effects are revealed. First, we note significant background effects associated with student socio-economic level (SES), race/ethnicity (MINOR), and prior school achievement (BYACH). Second, there are school contextual effects related to student track placement (VOTRACK and ACTRACK) and course taking experience (MATHCT). The inclusion and scaling of these controls allows the school-level variables in the top panel to be interpreted in terms of their effect upon a typical general track student with an average amount of course work in higher status mathematics.

[Table 5 about here]

Returning to the top panel, the first model of Table 5 reveals the significance of school-mean SES as a predictor of student achievement. (It is useful to recall from Table 4 that MEANSES, COM, and PRESS are each measured along roughly a six point continuous scale). Each unit increase in MEANSES is associated with nearly a unit (.92) increase in achievement. The second model reveals school sector effects, and though some effects appear, they are statistically non-significant. Each sector variable represents relatively few schools within this sample, however, and they are included as controls rather than to draw conclusions about the effects of private and special public schools. Their inclusion helps insure that any effects found for communality or academic press are attributable directly to those variables and not to any covariance with school sector. The third model of Table 5 reveals moderate significance for school communality. Specifically, a unit increase in communality contributes about a quarter (.26) point to student achievement. The final model of Table 5 reveals the significance of academic press, with each unit increase contributing about a half point (.52) increase in achievement. In addition, this final model indicates that academic press accounts for much of the impact of school SES and communality.

Attention now shifts toward finding evidence of the previously discussed three-way interactions among academic press, communality, and school SES. Table 6 reveals the first step of this effort. Low, middle, and high school-mean SES categories were created using cut points of one standard deviation above or below the mean.[1] Two-way interaction (for example, the effect of academic press in low-SES schools) is then examined by creating terms to represent the product of two variables; PRESS or COM, and a dummy variable representing school-mean SES category (e.g., PRESS*LSES). Three-way interaction is revealed by adding another variable to the term (e.g., PRESS*COM*LSES).

[Table 6 about here]

For ease of comparison, the first model of Table 6 presents the base effects of MEANSES, COM, and PRESS (the non-significant sector effects have been omitted). Each subsequent model introduces a set of interactions. The second model thus examines the additional effect of academic press in low and high SES schools compared to those in the middle-SES category. At this point, substantial variation appears in the effects of academic press across SES categories. For example, while the main effect of academic press (PRESS) is 0.59, an effect of 1.02 is expected for low-SES schools (the sum of 0.59 and 0.43). In contrast, the predicted effect of academic press in high-SES schools appears negligible at 0.08 (the sum of 0.59 and -0.51).

In similar fashion, the third model of Table 6 shows the incremental effects of communality in low- and high-SES schools (COM*LSES and COM*HSES). Among high-SES schools the effect is negligible. For low-SES schools, however, adding the base effect (0.20) to the additive effect (-0.38) produces an overall negative effect (-0.18). Though not entirely statistically significant, the pattern of influence revealed in the second and third models of Table 6 supports two prior arguments; that academic press should have its strongest effects in low-SES schools, and that net of academic press, communality may have a negative achievement effect in low-SES schools.

The final model of Table 6 reveals an important three-way interaction described earlier, the joint effect of academic press and communality across categories of school SES. The coefficient representing this effect in low-SES schools (PRESS*COM*LSES; 0.52) suggests that this package of school characteristics may work to increase student learning. Curiously, however, for high-SES schools the effect is negative (PRESS*COM*HSES; -0.43), even though the base effects of academic press and communality are both positive for this category of schools. Also interesting, and supportive of earlier arguments, is the increase in magnitude and significance of the coefficient representing the additive impact of academic press in low-SES schools (PRESS*LSES; 1.06). The total expected achievement for each unit increase in academic

press is now estimated at 1.66 for low-SES, 0.59 for middle-SES, and 0.38 for high-SES schools.

As expected, Table 6 suggests that academic press may have its strongest effect in low-SES schools, especially when combined with communal organization. Nonetheless, some aspects of the table are problematic. For example, the notion of "a unit change in the product of academic press and communality" is not conducive to a clear understanding of this interactive effect. More importantly, Table 6 does not address the interaction between communality and school SES across levels of academic press. Though earlier arguments about the impact of high communality in weakly academic low-SES schools require that such covariance be examined, this is not efficiently or effectively done through dummy-coding.

A clearer illustration of this covariance is obtained by assigning hypothetical school cases to represent various categorical combinations of academic press, communality, and school SES. To begin this procedure, median values were identified within a low, medium, and high category for each of these three variables. Using these values to represent each category allows 27 hypothetical school types to be defined (e.g., low PRESS, high COMM, and low MEANSES; high PRESS, high COM, and high MEANSES; etc.). By substituting these median values into an HLM equation containing *continuously coded* interaction terms, a predicted achievement effect was obtained for each of the 27 hypothetical school types (see Appendix for technical details).

The three-way interactions of interest can now be illustrated graphically. Figure 1 displays a predicted increment or decrement to individual student achievement for each of the 27 hypothetical school types. Each panel of Figure 1 represents a school SES category. In each SES category, the predicted achievement effect is measured on the y-axis, levels of academic press along the x-axis, and each line represents a different level of communality. Thus for each school-SES category, each slope represents the predicted achievement effect associated with increases in academic press at a given level of

communality. At the same time, the achievement effect associated with increases in communality at a given level of academic press is represented by the y-value of a point on the line.

[Figure 1 about here]

To interpret Figure 1, and to understand how it supports our thesis, attention turns first to the panel representing low-SES schools. Here, the slopes suggest the positive impact of academic press at all levels of communality. Among schools with high levels of communality, for example, it is predicted that those with high academic press will attain levels of achievement averaging about four points (4.09) higher than those with low academic press (see Appendix, Table A2). A somewhat lesser advantage is attained among schools with moderate and low communality levels. In contrast, scanning the vertical axis at each level of academic press reveals that the direction of the communality effect on achievement is tied to school academic press levels. Among low-academic press schools, for example, those with high communality attain levels of achievement roughly one point lower (0.97) than those with low communality. As academic press increases, however, the impact of greater communality becomes positive among low-SES schools. In fact, the strongest achievement effects are predicted for schools with high levels of both communality and academic press. Specifically, these schools are expected to attain levels of achievement one-and-a-half points higher than their low-communality/high-academic press counterparts.

Thus for low-SES schools, sense of community produces positive achievement effects only when working in tandem with high academic press. A similar pattern is revealed for medium-SES schools in the center panel of Figure 1. Again, academic press is positively associated with achievement at all levels of communality. In contrast to low-SES schools, however, the effects of communality "kick in" among moderate-SES schools

at lower levels of academic press. Like low-SES schools, however, the strongest achievement increment is predicted for schools having high levels of both academic press and communality.

Interestingly, the entire pattern of effect seems to reverse for high SES schools. The effect of academic press begins to wane as levels of communality increase. In fact, the greatest achievement effect is predicted for highly communal schools with low academic press.

Discussion

The overall pattern of findings revealed on Table 6 and Figure 1 support the major arguments of this paper. First, academic press is significantly linked to achievement across all schools. Second, although academic press levels tend to be lowest among low-SES schools, it is here where we find its strongest achievement effect.[2] Third, communality is negatively associated with achievement in low-SES schools with weak academic press. Fourth, for low- and middle-SES schools, the combination of academic press and communal organization constitutes the strongest package of achievement effects. Finally, in contrast, the strongest effects for high-SES schools are predicted for combinations of high communality and low academic press.

Though it may seem intuitive that schools driven by academically oriented values would produce higher levels of student achievement, the pattern of findings presented here is quite striking, especially across school socio-economic levels. For example, while school academic press has significant achievement effects across all SES categories, these effects are nearly three and four times as great for low- than for middle- and high-SES schools respectively (beta=1.65 compared to 0.59 and 0.38; see Table 6). This finding seems even more interesting considering the distribution of academic press across levels of SES. Low-SES schools, while showing the greatest achievement effects, report the

lowest levels of school academic press. High-SES schools, where the achievement effects are comparatively small, report the highest levels of school academic press.

As discussed earlier, this pattern of findings makes sense if we think of academic press as a form of social capital; its value dependent upon its own scarcity and that of other resources which might serve as substitutes. This logic also helps explain our finding that the negative effects of the "weak academic press/high communality" combination are confined to low-SES schools. The levels of academic expectation placed upon more affluent students by parents and other significant adults is high enough to counter balance any deficit of academic press within the school.

With regard to sense of community in schools, our findings suggest that its achievement effects are highly contextual, varying significantly across levels of school SES and academic press. For moderate and low-SES schools, communality is linked to higher achievement, *to the extent it is rooted within an academically oriented organizational culture*. This suggests that the most promising path to higher performance in schools of low-to-moderate SES is one that focuses on raising academic press while remaining mindful of the amplifying influences of communal organization.

For high-SES schools, the message seems to be reversed; that is, while academic press is important, such schools may benefit most from the development of more supportive and cohesive organizational characteristics. This may stem from the fact that students attending high-SES schools already experience relatively high academic expectations outside of school, and increasing their exposure may produce diminished returns. And although the high-SES schools in our sample also tend to maintain higher levels of communality, descriptive statistics from the larger NELS:88 10th grade sample (not tabulated here) reveal rather deep cross-sector contrasts in the way students experience it. For example, compared to those in private schools, high-SES public school students report significantly lower levels of agreement with the statement that "teachers are interested in students" or that "most of my teachers really listen to what I have to say."

For affluent public schools, an awareness of such sentiments may offer an avenue for attaining their full academic potential.

Policy Implications

In addition to these conclusions, our findings have broader implications for educational policy. First, they suggest that schools do their students no service by diluting their academic mission. To the contrary, schools can apparently make marked improvement in achievement levels by increasing opportunities for intellectual engagement. All in all, our evidence suggests that most schools -- particularly low-SES schools -- can increase student achievement by placing their academic mission at center stage, and allowing their social mission to play a supporting role. Effective low-SES schools thus appear to be those which find ways to translate the standard script about the importance of high expectations into a meaningful academic drama.

Second, our findings suggest that exposing students to mainstream academic subjects can help accomplish this task.[3] We thus add our voice to the emerging consensus as to the profound importance of offering all students the type of instruction that allows access to higher order subjects. Though we do not argue here for the total elimination of ability grouping, our findings do highlight the importance of increasing content congruence across ability groups. For example, schools can limit the spread of course differentiation by limiting the number of ability categories or by refraining from shuttling students into "sidetrack" courses (e.g., Consumer Math or General Science), and away from more promising avenues to higher status knowledge (e.g., Algebra or Biology).

Finally, in the debate over equality of educational opportunity, some have argued that it would be unfair to hold all schools to the same achievement goals until all schools receive equal fiscal resources. In focusing on fiscal inequality, however, they risk overlooking a more serious deficit related to the unequal distribution of academic press. As Figure 1 illustrates, lower-SES schools may attain levels of achievement approaching

that of their higher-SES counterparts by forging an organizational amalgam of high academic demand and strong individual support. Overall, the evidence presented here suggests that educational equity is advanced as low-SES schools marshal their human and social capital in more academically focused ways.

Conclusion

In both local and national arenas, the underpinnings of "community" often consist of rough-edged social norms and realities. Based on such rudimentary elements, communities fashion the "gentler rewards and penalties of social life" (Murray, 1992). As Durkheim might have suggested, the gentler aspects of school society are rooted in the student's gradually evolving perception of demand, structure, and discipline, each of which provide crucial ballast in the process of formal learning. Seasoned learners themselves, educators and policy makers may take this process for granted, believing that students could develop a sense of school attachment and commitment without also experiencing and appreciating the rugged demands of learning. In contrast, our study suggests that the most effective schools are those where a sense of community emerges as a positive result of a strong sense of academic purpose; where the message is conveyed that although what students accomplish here may sometimes be difficult, it will always be important.

Endnotes

Student variables are centered to a mean of zero.

[1] The distribution of school-mean SES was found to be nearly normal across our sample of schools.

[2] Correlations for the three pertinent variables are as follows:

	MEANSES	COM
COM	.46	
PRESS	.63	.52

[3] This organizational component is represented in both the communality and academic press indices, though in slightly different ways. The community index contains a measure of program homogeneity, the extent to which students experience the same *type* of academic program. The academic press index contains measures of program *level*, the extent to which students take standard or higher-level courses in social studies, science, and humanities. Correlation and regression analyses indicate that both of these items relate significantly to higher achievement.

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Appendix

Deriving the Predicted Achievement Effects Reported in Figure 1

Table A1 below summarizes the model used to obtain the predicted effects shown in Figure 1. Of special note is the main interactive effect (MEANSES*COM*PRESS; β=-0.16, t=-2.04). Other interaction terms serve as controls. The student-level portion of this model is virtually identical to other tables and is not shown here. Table A2 reports the exact predicted effects.

It is important to understand that the effects reported on Figure 1 relate not to individual cells or cell sizes, but to the relative differences between continuous values of academic press, communality, and school-mean SES within and among schools in the sample. In other words, the use of continuous interaction terms produces predicted effects that are *independent* of actual sample distribution across the 27 hypothetical combinations of the three variables.

Table A1

Interactive Effects of MEANSES, PRESS, and COM

Variable	Coefficient	t
Intercept	38.34	310.672
MEANSES	.71	4.45
COM	.26	1.85
PRESS	.66	4.26
MEANSES*COM*PRESS	-.16	-2.04
MEANSES*PRESS	-.25	-1.72
MEANSES*COM	.15	1.05
PRESS*COM	.09	.66

Table A2

Predicted Achievement Effects for Hypothetical School Types

Low-SES Schools			
Academic press	low	medium	high
Communality			
low	-1.76	-1.08	-.14
medium	-2.17	-1.05	.50
high	-2.73	-1.01	1.36
Middle-SES Schools			
Academic press	low	medium	high
Communality			
low	-1.11	-.49	.38
medium	-1.02	-.21	.90
high	-.90	.15	1.59
High-SES Schools			
Academic press	low	medium	high
Communality			
low	-.08	.47	1.22
medium	.82	1.12	1.53
high	2.02	1.99	1.95

Table 1

Indicators of Academic Press*

Component	Kind of Measure
Academic Climate	
Perceptions of academic climate	Factor composite of principal's report, mean of student reports
Course requirements in math and foreign language	Principal's report
Teachers' professional credentials	School % of teachers with MA degree or higher
Extent of "higher order" course taking (non-math)	School mean of student reports
Disciplinary Climate	
School policies on absenteeism and misbehavior	Principal's report
Perceptions of disciplinary climate	School mean of student and teacher reports
School response to students' absence from school	School mean of teacher reports
Teachers' Instructional Practices and Emphasis	
Emphasis on objective standards of achievement	Factor composite of teacher reports
Emphasis on higher order instructional goals	School mean of teacher reports
Amount of homework assigned/ extent of feedback	School mean of teacher reports
Response to poor student performance	School mean of teacher reports
Time spent planning and preparing out of school	School mean of teacher reports
Classroom instructional quality and academic demand	School mean of student reports

* 28 indicators based on NELS:88 survey items were used to measure the 13 components described here. Alpha = .73 for the 28 indicators. See Coleman, et al. (*forthcoming*) for further technical details.

Table 2

Indicators of School Communality*

Component	Kind of Measure
Shared Values	
Teacher agreement over instructional goals	Kendall's measure of concordance
Teacher consensus on beliefs and values	School mean of teacher reports
Teacher belief that students can learn	School mean of teacher reports
Principal/teacher agreement over school policies	Principal's report
Principal/teacher agreement over attitudes toward students	Principal's report
Common Agenda of Activities	
Track/course-taking similarity	Proportion of students in extracurricular activities
Proportion of students in leadership roles	Percent of student reports
Proportion of students in leadership roles	Percent of student reports
Organizational Characteristics	
Teacher cooperation with colleagues	School mean of teacher reports
Percent of teachers using teacher help	School mean of teacher reports
Extent of cooperative planning	School mean of teacher reports
Staff commitment to evaluation	School mean of teacher reports
Perception of staff support	School mean of teacher reports
Teachers show interest in students as people	School mean of student reports
Teachers really listen to what students say	School mean of student reports

* 24 indicators based on NELS:88 survey items were used to measure the 15 components described here. Alpha = .84 for the 24 indicators. See Shouse (1995) for further technical details.

Table 3

Descriptive Statistics

Name	Description	Mean	S.D.	Range
Student-level Variables[a]				
F1TXMIRR	Dependent variable; 10th grade math IRT score	38.17	12.25	46.87
SES	Student socio-economic status	0.10	0.79	5.71
MINOR	1 if Black or Hispanic	0.17	0.37	1.00
VOTRACK	1 if in vocational program	0.14	0.34	1.00
ACTRACK	1 if in academic program	0.37	0.48	1.00
BYACH	8th grade math IRT score	24.02	8.65	32.65
MATHCT	No. math courses taken, algebra and beyond	2.96	1.94	8.00
School-level Variables				
MEANSES	School-mean SES	0.00	1.00	5.81
SPPUB	1 if public magnet school or "school of choice"	0.18	0.39	1.00
CATH	1 if Catholic school	0.03	0.17	1.00
OPRIV	1 if other private school	0.05	0.21	1.00
COM	Communality index	0.00	1.00	6.14
PRESS	Academic press index	0.00	1.00	6.06
MSES	1 if in mid. MEANSES category	0.71	0.46	1.00
HSES	1 if in high MEANSES category	0.16	0.37	1.00
LSES	1 if in low MEANSES category	0.14	0.34	1.00

[a] In all analyses presented in this study, student-level independent variables were rescaled to mean of zero and a standard deviation of one.

Table 4

School and Student Samples by School Type

School Type	School n (%)	Student n (%)
Public		
Comprehensive	294 (74)	5700 (73)
Special Public (i.e., magnet, choice)	73 (18)	1441 (18)
Private		
Catholic	12 (3)	393 (3)
Other	19 (5)	333 (6)
Total	398	7867

Table 5

Base Effects of School SES, School Sector, Communality, and Academic Press on Student Achievement

Variable	School-level Effects							
	β	t	β	t	β	t	β	t
Intercept	38.21	349.30	38.21	295.87	38.24	295.60	38.27	300.08
MEANSES	.92	7.47	.94	6.52	.87	5.91	.63	3.97
SPPUB			-.11	-.39	-.11	-.39	-.11	-.39
CATH			1.14	1.74	.85	1.29	.72	1.10
OPRIV			-.32	-.53	-.76	-1.18	-1.22	-1.90
COM					.26	1.99	.13	.97
PRESS							.57	3.79
	Student-level Effects							
SES	.43	3.5	.42	3.55	.42	3.56	.42	3.55
MINOR	-.91	4.15	-.90	-4.12	-.90	-4.10	-.97	-4.44
VOTRACK	1.07	-4.15	-1.07	-4.14	-1.07	-4.14	-1.08	-4.19
ACTRACK	1.35	7.75	1.35	7.75	1.35	7.77	1.32	7.57
MATHCT	1.12	20.56	1.12	20.52	1.12	20.49	1.13	20.59
BYACH	.72	88.78	.72	88.77	.72	88.65	.72	88.62

Table 6

Interactive Achievement Effects of Academic Press, Communality, and School SES

Variable	School-level effects							
	β	t	β	t	β	t	β	t
Intercept	38.21	355.83	38.53	320.33	38.35	320.17	38.32	312.61
MEANSES	.56	3.63	.66	3.93	.68	4.03	.63	3.69
COM	.09	.71	.13	1.01	.20	1.22	.22	1.31
PRESS	.52	3.51	.59	3.57	.57	3.36	.59	3.47
PRESS*LSES			.43	1.23	.63	1.58	1.06	2.22
PRESS*HSES			-.51	-1.86	-.53	-1.51	-.21	-.53
COM*LSES					-.38	-1.04	-.13	-.34
COM*HSES					-.04	-.12	.34	.83
PRESS*COM							.10	.53
PRESS*COM*LSES							.52	1.28
PRESS*COM*HSES							-.43	-1.58
	Student-level Effects							
SES	.43	3.57	.43	3.57	.42	3.56	.43	3.56
MINOR	-.99	-4.51	-.97	-4.43	-.98	-4.45	-.98	-4.47
VOTRACK	-1.08	-4.21	-1.08	-4.20	-1.09	-4.20	-1.08	-4.20
ACTRACK	1.30	7.46	1.30	7.51	1.30	7.51	1.31	7.53
MATHCT	1.13	20.67	1.13	20.64	1.13	20.60	1.13	20.61
BYACH	.72	88.63	.72	88.66	.72	88.63	.72	88.67

Figure 1

Predicted Interactive Achievement Effects of Academic Press, Communality, and School SES